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PART 2

*Your attention is invited*

**NEWS  
OF THE  
SOIL  
MECHANICS  
AND  
FOUNDATIONS  
DIVISION  
OF  
ASCE**



**JOURNAL OF THE SOIL MECHANICS AND FOUNDATIONS DIVISION  
PROCEEDINGS OF THE AMERICAN SOCIETY OF CIVIL ENGINEERS**



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## DIVISION ACTIVITIES

### SOIL MECHANICS AND FOUNDATIONS DIVISION

#### Proceedings of the American Society of Civil Engineers

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#### NEWS

December, 1961

#### PHILADELPHIA SECTION ACTIVITIES

The Soil Mechanics and Foundations Division of the Philadelphia Section A.S.C.E. holds about 3 general meetings each year. These meetings have covered foundation topics of local interest, recommendations relating to the use of various construction materials and methods to be incorporated in the Philadelphia Building Code, local sub-soil conditions including methods of subsurface exploration, etc. Occasionally an all day field trip has been arranged to study the geology in the Delaware Valley area. These trips have been conducted by Geologists connected with the University of Pennsylvania, Philadelphia Academy of Natural Sciences, Army Engineer Corps, etc.

The Philadelphia Section meeting scheduled for February 13, 1962 will be sponsored by the Division. The subject will be "Difficult Foundation Problems" to be presented by Dr. Gregory P. Tschebotarioff, Princeton University, Consulting Engineer (a member of our Division). Mr. Mervin H. Kohler will act as Chairman.

In addition to the general meetings, sub-committees are usually working on various projects. A most recent example of such activity has been a complete review of a report prepared by the Mayor's Advisory Committee to revise the Foundation Section, and portions of the Structural Section of the Philadelphia Building Code. An appointed Committee consisting of 10 Division Members held weekly meetings since last October. The report was submitted in September 1961.

Other recent studies with conclusive recommendations requested by the Philadelphia Department of Licenses and Inspections, for use in the Philadelphia Building Code have been completed and submitted by this Division for the following: (a) Local use of creosoted wood piles; (b) allowable loads on wood piles; (c) precast concrete piles; and (d) pressure injected footings.

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Note.—No. 1961-44 is Part 2 of the copyrighted Journal of the Soil Mechanics and Foundations Division, Proceedings of the American Society of Civil Engineers, Vol. 87, No. SM 6, December, 1961.

## PROCEEDINGS OF THE FIFTH INTERNATIONAL CONFERENCE

Sets of the Proceedings of the Fifth International Conference on Soil Mechanics and Foundations Engineering can be obtained by writing to the publisher: Dunod, 92, rue Bonaparte, Paris (6e) France. The price of the three volumes is 350 N. F. (Approximately \$72.00). International money orders obtained from any United States Post Office are a convenient way of forwarding the remittance to the publisher.

## SAN FRANCISCO SECTION ASCE EXCURSION

The San Francisco Section ASCE through its Soil Mechanics and Foundations Division held an excursion on September 16, 1961, to the construction site of the Briones Dam near Oakland, California. The \$14 million Briones Project is one feature of the East Bay Municipal Utility District's \$283 million ten-year expansion program. The project which will add 22 billion gallons of terminal storage to the system includes a 270-foot earthfill dam some 1800 feet long, a concrete lined open channel spillway, a free standing inlet-outlet tower 250 feet high and an inlet-outlet tunnel 3300 feet long. The ten million yard embankment involves a novel departure in earth dam design by placing the impervious section on the upstream face as in a rockfill dam. Also notable in the contract is an extensive installation of instrumentation consisting of piezometers and settlement markers.

CALIFORNIA ASSOCIATION OF ENGINEERING GEOLOGISTS  
ANNUAL MEETING

The California Association of Engineering Geologists held their fourth annual meeting at Sacramento, California, October 13 to 15, 1961. There were 177 registered at the three-day session which included a general session on Friday, a symposium of "The Role of Ground Water in Engineering Geology Problems" on Saturday and field trips to the Corps of Engineers' New Hogan Dam Site, the California Department of Water Resources' Oroville Dam Site, and the Bureau of Reclamation's San Luis Project. Information about the organization or the meeting can be obtained from the secretary, Wilferd W. Peak, California Association of Engineering Geologists, P. O. Box 4164, Sacramento 25, California.

## ROCK MECHANICS SYMPOSIUM

The Fifth Rock Mechanics Symposium will be held May 3 to 5 1962 at the University of Minnesota at Minneapolis.

## EROSION AND SEDIMENTATION

A symposium on land erosion will be held in Bari, Italy in October 1962. This symposium will be sponsored by the International Association of Hydrology. Those interested in the fields of erosion and sedimentation can forward inquiries to Dr. M. Gordon Wolman, Isiah Bowman Department of Geography, the John Hopkins University Baltimore 18, Maryland.

## NEWS FROM THE COLORADO SECTION

The following is a summary of meetings of the Soil Mechanics and Foundation Division, Colorado Section of the American Society of Civil Engineers, for the year 1960 to 1961.

In addition to the monthly meetings, the local section co-sponsored with the Civil Engineering Department of the University of Colorado a five-day conference on the shear strength of cohesive soils. This conference was highly successful, and over three hundred individuals registered at the conference. Another conference of a similar nature is tentatively planned for 1964.

At the June 1961 meeting of the Soils Mechanics and Foundation Division, the following were elected officers for 1961 to 1962:

Chairman	Claude C. Klemme, Jr.
Vice Chairman	John Bara
Secretary-Treasurer	Fu Hua Chen

OCTOBER 1960 to JUNE 1961  
SOIL MECHANICS AND FOUNDATION DIVISION  
COLORADO SECTION  
AMERICAN SOCIETY OF CIVIL ENGINEERS  
SUMMARY OF MONTHLY MEETINGS

No.	DATE	PLACE	SPEAKER	TITLE	ATTENDANCE
1	October 5, 1960	All meetings were held in the building of the Engineers Club, Limited	Mr. A. J. Ryan Engineer A. J. Ryan & Associates Beaver, Colorado	"Pavement Design for Swelling Subgrades"	23
2	November 2, 1960		W. G. Holtz J. W. Hilf H. J. Gibbe F. C. Walker Civil Engineers United States Bureau of Reclamation	Panel-type discussion on the June Research Conference on Shear Strength of Cohesive Soils	38
3	December 7, 1960		Mr. George McCormack Construction Engineer for Jefferson County Public Schools Lakewood, Colorado	"The Application of Soil Testing in the Construction of Jefferson County Schools"	20
4	January 4, 1961		Mr. Fu Hua Chen Civil Engineer Woodward-Clyde-Sherard & Associates Beaver, Colorado	"The Construction of the Burma Road"	17

## SUMMARY OF MONTHLY MEETINGS (CON'T)

No.	DATE	PLACE	SPEAKER	TITLE	ATTENDANCE
5.	February 2, 1961	All meetings were held in the building of the Engineers Club, Limited	Dr. Casagrande Professor and Consulting Engineer Harvard University Cambridge, Massachusetts	"Seepage Through Concrete Dam Foundations"	161
6.	March 1, 1961		Mr. E. E. Esmiol Civil Engineer U. S. Bureau of Reclamation	"Some Facinating Aspects of Soils Problems in the Vicinity of Willard Dam Utah"	20
7.	April 5, 1961		Mr. E. C. Higginson Chief, Concrete Laboratory U. S. Bureau of Reclamation Denver	"The Effect of Sulphates in Soil and Water on Concrete"	17
8.	May 3, 1961		Mr. J. C. Bayless Manager, Engineering Geology Operations Doringsfeld, Amuedo & Ivy Denver	"The Geologist in Dam Design and Construction"	17
9.	June 7, 1961		Mr. M. Ettinger Consulting Geologist Jack Grynberg & Associates Denver	"The Use of Electric Logging in Soils Investigation and Engineering Geology"	16

## PORTUGAL - SYMPOSIUM

A Symposium on Road Tests for Pavement Design will be held in Lisbon, Portugal, April, 1962.

## I. Object

1. Exchange of informations on road tests carried out and discussion of the results obtained including in special the following points:
  - a. Report on the chief tests carried out in each country.
  - b. Inventory of all the tests carried out in each country and of the results obtained.
2. Exchange of views on the policy followed in each country for improving road pavement design methods.
3. Discussion with a view to preparing a kind of philosophy from which recommendations on the improvement of design methods and technical rules for the tests could eventually be derived.

## II. Place and Date of the Meeting

The meeting will be held in Lisbon at the Laboratório Nacional de Engenharia Civil, in April 1962.

## III. Schedule

### Monday

9:30-12:00 A.M. - Visit to the Laboratório for all the persons wishing to do so.

2:30-5:00 P.M. - Session on road tests.

### Tuesday

Ditto.

Ditto.

### Wednesday

Visit to the prestressed experimental stretch near Leiria. Batalha, Fátima and Nazaré will be visited in passing.

### Thursday

9:30 - 12:00 A.M. - Session on design methods.

2:30 - 5:00 P.M. - Ditto

### Friday

9:30 - 12:00 A.M. - Ditto

2:30 - 5:00 P.M. - Recommendations and conclusions

### Saturday

9:30 - 12:00 A.M. - Ditto.

2:30 - 5:00 P.M. - Visit to sites in the Lisbon suburbs.

## IV. Official Languages

The official languages of the meeting will be Portuguese, French and English. Simultaneous translation of these three languages will be made.

## V. Papers

The papers are to be delivered typewritten, in French or English and should not exceed about 2,500 words.

Directions for presentation of the text and figures shall be issued in due time.

Together with the name of the paper to be presented, the authors shall present a summary with about 100 words.

The papers which must be original have to be received until December 31, 1961.

## VI. Publications

A preliminary publication in off-set will be issued to be sent to the participants at a date enabling them to study it, before the meeting.

## VII Registration

Preliminary registrations should be entered before the 30th of September as well as the title and the summary of the papers to be presented.

Registration fees, to be settled at the time of the final registration, will amount to U. S. \$20 for the participants and to U.S. \$10 for each person accompanying a participant.

The cost of the final publication is included in this sum.



## VIII Correspondence

All the correspondence concerning the meeting or papers to be presented is to be addressed to:

Secretariado do Simpósio sobre Estradas  
Experimentais para Dimensionamento  
de Pavimentos

Laboratório Nacional de Engenharia Civil  
Avenida do Brasil, Lisboa 5, Portugal

## IX Next Bulletin

Bulletin n.º 2 giving full details on the program, registration, tours, etc. will be sent in due time to every person having entered his preliminary registration.

## CONFERENCE ON FOUNDATIONS ON PROBLEM SOILS

A Conference on Soil Mechanics and Foundations was presented at the University of Wisconsin Extension Division on December 14, 15, 1961. The subject under consideration was "Problem Soils and How They Can be Altered to Carry Loads From Conventional Spread Footings.

Many building sites otherwise suited for commercial use have been rejected in the past because the nature of the underlying soil was thought to demand costly pile foundations. Greater industrial growth today dictates a further evaluation of these sites. The science of soil mechanics has developed methods and techniques by which unsatisfactory soils can be improved to carry loads from conventional spread footings both economically and with assurance of satisfactory performance.

Eminent authorities in the field of soils engineering presented background data and steps required for rational analysis of the problem. Methods of coping with the low bearing capacity soils were discussed at length and adequate time was provided for questions. Classic cases were described step by step to amplify the procedures and methods involved.

The program was designed for the practicing architect and structural engineer. Previous study of soil mechanics was not a requirement of the conferee. The papers presented were:

## FUNDAMENTAL CONSIDERATIONS

William G. Murphy  
Associate Professor of Theoretical and Applied Mechanics  
Marquette University  
Milwaukee, Wisconsin

## SITE INVESTIGATION

Ralph B. Peck  
Professor of Foundation Engineering  
University of Illinois  
Urbana, Illinois



**IMPROVING UNSATISFACTORY GRANULAR SOILS FOR FOUNDATIONS**

B. K. Hough, Consulting Engineer  
Soils and Foundation Engineering  
Ithaca, New York

**IMPROVING UNSATISFACTORY COHESIVE SOILS FOR CARRYING  
FOUNDATION LOADS**

Dames and Moore  
Consultants in Applied Earth Sciences  
New York, New York

Don U. Deere  
Professor of Civil Engineering and of Geology  
University of Illinois  
Urbana, Illinois

**FOUNDATIONS ON COMPACTED FILL FOR HIGHWAY STRUCTURES**

Ohio State Highway Department  
Columbus, Ohio

**FORTY ACRE SEISMOGRAPH STATION**

The Colorado School of Mines has announced plans for a forty acre seismograph station to be located near Bergen Park, Colorado.

The \$75,000 installation will record all earth movement and report its seismography charts daily to Washington, D. C.

The Mines station is one of a planned system of 125 similar stations in a global network and is underwritten by federal funds for underground nuclear explosion detection.

**SPECIAL SUMMER PROGRAM AT M.I.T.**

"The Behavior of Soil Under Dynamic Loadings" will be the subject of a two-week Special Summer Program at Massachusetts Institute of Technology during the summer of 1962. The program, which is tentatively scheduled to run from August 27 through September 7, is being organized by Professor Robert V. Whitman, and will include such topics as:

Stress-Strain-Time Behavior of Soil  
Theory and Experiments Concerning Wave Propagation  
Foundation Vibrations  
Stability of Slopes During Earthquakes.

The lectures will be given by members of the M.I.T. staff and by guest lecturers. Persons desiring to be put on the mailing list for further information should write to the Director of Summer Sessions, Room 7-103, Massachusetts Institute of Technology, Cambridge 39, Massachusetts.

## NEW A.S.T.M. PUBLICATION

Nuclear Methods For Measuring Soil Density and Moisture - STP-293

Newly developed nuclear methods for accurate and rapid measurement of moisture and density of soil are presented in the Symposium on Nuclear Methods for Measuring Soil Density and Moisture, STP-293, just published by the American Society for Testing and Materials.

The papers present data obtained on specific projects and evaluate the methods by comparing results with those obtained by the conventional sand-cone and oven-drying method.

Apparatus, instruments, techniques, limitations and applications are described in detail, and they are well illustrated in the book.

In addition to the seven papers included, considerable discussion material has been appended to this volume.

Contents

Introduction - Bonner Coffman

Design and Application of the Nuclear-Chicago d/M Gauge - O. Kenton Neville and Theodore W. Van Zelst

Design and Calibration of a Neutron Moisture Meter - K. N. Burn

Application of Nuclear Soil Meters to Compaction Control for Airfield Pavement Construction - Paul F. Carlton

Experiences with Nuclear Moisture and Density Surface Probes on O'Hare Field Project - John P. Gnaedinger

Comparison of Nuclear and Sand-Cone Methods of Density and Moisture Determinations for Four New York State Soils - Sidney Mintzer

Evaluation of Nuclear Moisture-Density Testing Equipment - W. N. Carey, Jr., J. F. Shook, and J. F. Reynolds

Copies of this book may be obtained from ASTM headquarters, 1916 Race Street, Philadelphia 3, Pennsylvania at \$4.00 each. To ASTM members, \$3.20.

SILVER ANNIVERSARY OF THE COMMITTEE ON PHYSICO-CHEMICAL  
PHENOMENA IN SOILS OF THE HIGHWAY RESEARCH BOARD,  
NATIONAL RESEARCH COUNCIL

1936 - 1961

One of the first committees created under the 1935 reorganization of the Highway Research Board was a committee on "Physico-Chemical Testing of Soils and Application of the Results in Practice."

From 1935-1955 the committee organized an international symposium on the Science of Soil Stabilization. The results of this symposium were published as Bulletin 108.

A symposium on water and its conduction in soils was the next undertaking. This was published as Special Report #40 during the year 1958.

For the January 1961 meeting the committee sponsored a symposium on Soil Stabilization with Phosphoric Acids and Their Derivatives. The respective papers are being edited at the present time and it is hoped they will form an interesting and valuable bulletin.

ASCE MANUAL NO. 42—DESIGN OF STRUCTURES TO RESIST  
NUCLEAR WEAPONS EFFECTS

As a project of the Committee on Structural Dynamics of the Engineering Mechanics Division, through its Manual Subcommittee this Manual (No. 42) has been in preparation for several years. It was written for use of the engineering profession in the design of structures which are intended to be resistant in some degree to all of the effects associated with the detonation of a nuclear weapon. Copies of this paper-bound Manual can be obtained by completing the accompanying coupon. The list price is \$4.00 and ASCE members are entitled to a 50% discount.

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M42

## RESEARCH CONFERENCE ON SHEAR STRENGTH OF COHESIVE SOILS

The papers presented at the ASCE Research Conference on Shear Strength of Cohesive Soils held at the University of Colorado, in June 1960, have been published in a single hardbound volume. The book contains the Foreword, Conference Program, Photographic Report, Opening Address, and all 26 Conference Papers. Also included are the written discussions and closures, and the reports by the moderators of panel sessions. The book has been prepared in an attractive cloth binding and is complete with a Table of Contents—Subject Index and Index of Authors and Discussers.

The list price for this volume is \$10.00 per copy (net); no discounts are available.

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Please send \_\_\_\_\_ copy(s) of the Research Conference on Shear Strength of Cohesive Soils.

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...S.S.

FEBRUARY NEWSLETTER

Deadline data for arrival at this office of contributions for the February Newsletter: December 27, please.

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